

Ball and Socket Joint (with 3/4" ball bearing)

:a joint in which a ball moves within a socket so as to allow rotary motion in every direction within certain limits

ID=Inside Diameter OD=Outside Diameter WT=Wall Thickness

1. Disc
 - a. Cut out a 20g disc with a 28.58mm diameter (can be found on a standard circle template).
 - b. Dap the disc until you are using a dapping punch the same diameter as your pre bought ball bearing (.75" or 3/4" or 19.1mm). Most dapping sets have this size
 - i. This will give you a half dome with a height that a little over half its diameter.
 - c. Sand the dome flat until height is exactly half of diameter, creating a perfect half dome.
 - i. Height: 10.45mm
 - ii. Diameter: 20.9mm
2. Ring/Collet
 - a. Take a piece of 20g sheet and cut a strip 2.5mm x 60mm*
 - i. When making a band ring (ID 19.1 = Size 9) (Size 9 with 20g metal = 61.6 material length)
 - ii. I rounded down from 61.6 to 60 because I can stretch the ring/collet until it fits perfectly over the ball bearing once its soldered.
 - b. Solder ring together like you would a typical band ring (hard solder).
 - c. Sand ring on both sides until smooth. Then stretch until it just slides over .75" ball bearing.
 - i. At this point the OD of the ring and OD of the half dome should be almost exactly the same.
 - d. Solder ring/collet centered onto half dome (medium solder).
3. Rods/Wire
 - a. Cut two pieces of thick gauge wire, file ends flush and solder to center of half dome and .75" ball bearing.
4. Setting the ball bearing
 - a. Insert ball bearing into half dome with attached collet
 - b. Set the ball bearing like you would a thick bezel setting. I use a hammer and a swage block

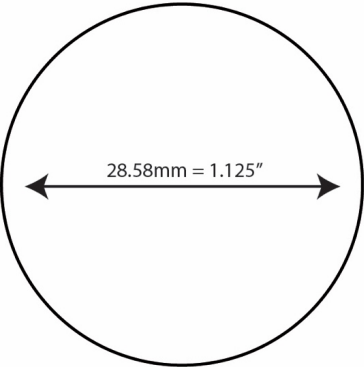
Double Pendulum Style Earrings

:an object hung from a fixed point so that it can swing freely backward and forward

1. Tube & Wire
 - a. Use thick wall tubing that is slightly larger than wire/rod that will be inserted through it.
 - i. Tube will be used to create knuckles
 - b. Tube: OD 2mm ID 1mm WT .5
 - c. Wire/rod: 20g wire .8mm
2. Pendulum
 - a. Decide how many pendulum elements you want to swing from the pivot point. For this example, I will use 2.
3. Knuckles
 - a. Figure out how many knuckles (made from tubing) you will need for your objects to swing. For these two objects I use 3 knuckles. 2 knuckles for one object and 1 knuckle for the other.
 - b. The combined length of knuckles should run almost the entire length of your design minus 1mm to allow for movement. The knuckle length can vary, but I like to keep my knuckles the same length.
 - i. Knuckle size: 5mm
 - ii. Earring width: 16mm
 - iii. Extra space for movement: 1mm
 - c. Solder 20g wire to one side of earring.
4. Connecting parts
 - a. Solder knuckles to appropriate parts.
 - b. Use a piece of .7 or .9 pencil lead or pin stem wire (.8mm) to keep knuckles straight.
 - c. Use single knuckle to keep the spacing correct on other two knuckles.
 - d. Slide on three knuckles and attached material onto 20g wire and solder two contacting points. This will lock everything in place.

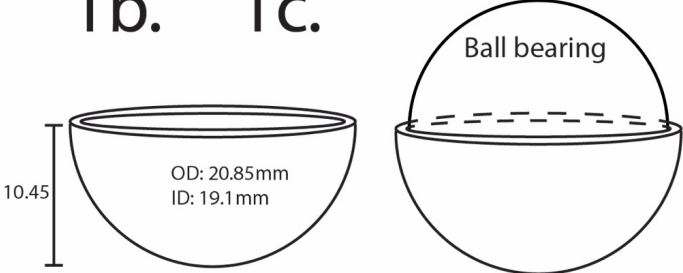
Ball and Socket Joint

1a.

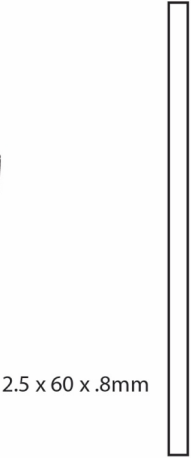


1b.

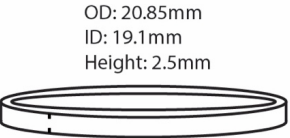
1c.



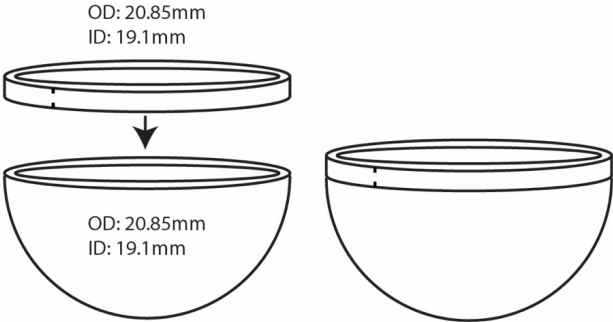
2a.



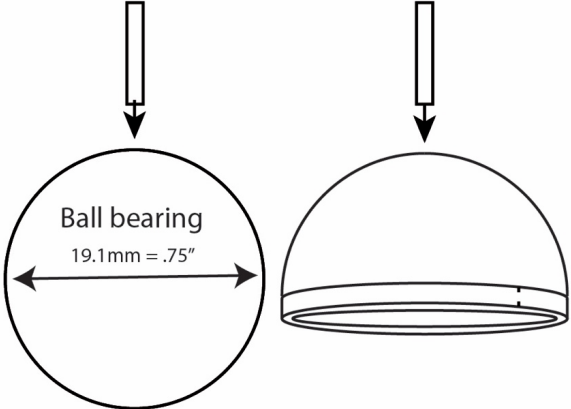
2b. 2c.



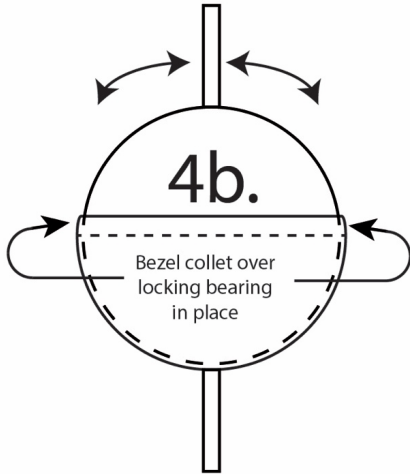
2d.



3a.



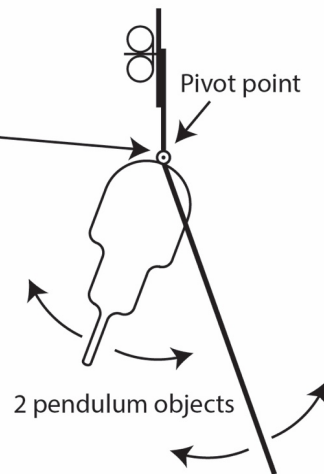
4a.



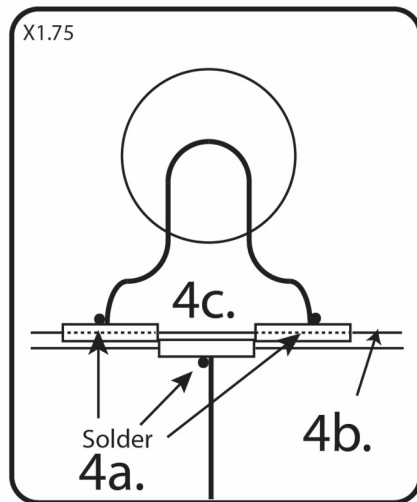
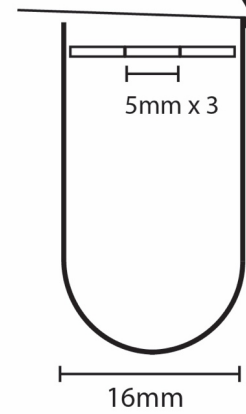
1a.



2a.



3a. 3b. 3c.



4d.

